

SUMMARY

The master thesis comprises: pages 163, 146 pages main text among them, figures 37, tables 6, appendix 1, 52 references.

The object of research - the control process of synchronous motor (SM).

The subject of research - algorithms for control the torque, angular velocity and angular position of SM.

The purpose of the work - the synthesis and theoretical research of algorithms for control the torque, angular velocity and angular position of SM with permanent magnet and synchronous reluctance motor(SRM).

Research methods. The research is based on the methods of modern nonlinear control theory, such as: control by the principle of passivity, inverse step-by-step design procedure, as well as methods of mathematical modeling.

Results of work. Unified algorithms for control the torque, angular velocity and angular position of of SM with permanent magnet and SRM are synthesized, which provide high indicators of control quality without the use of current sensors. The asymptotic tracking of the given trajectories is proved. The solvability of control processes in electrical and mechanical subsystems is proved. Modeling programs for the study of synthesized algorithms have been created. By modeling, the theoretical conclusions made in the synthesis of algorithms for control the torque, angular velocity and angular position are proved.

These results are a priority for systems where the cost of the control system is an important factor while maintaining high requirements for control accuracy.

SYNCHRONOUS RELUCTANCE MOTOR, CURRENT SENSOR, STRUCTURAL SCHEME, VECTOR CONTROL, INDUCTIVITY.

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N. Contr.						NTUU «Igor Sikorsky Kyiv Polytechnic Institute», FEA, Department AEMS-ED gr. EP-81MN		
Approved.	S. Peresada					<i>Summary</i>		